Specifications

IN1604 Series

Video input

Number/signal type	1 analog RGBHV, component video (YUVi, YUVp, and YUV-HD), S-video, or composite video 3 HDMI (or DVI-D if using an adapter) (HDCP compliant)
Connectors	1 female 15-pin HD 3 female HDMI type A
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and for R-Y and B-Y of component video 0.3 Vp-p for C of S-video
Minimum/maximum levels	Analog: 0.0 V to 2.0 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency	15 kHz to 100 kHz
Vertical frequency	24 Hz to 75 Hz
Resolution range	640x480 to 1920x1200* sampled pixel for pixel, NTSC, PAL, SECAM, 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, and 2K *reduced blanking
Return loss	>30 dB @ 5 MHz
DC offset (max. allowable)	0.5 V
Standards	DVI 1.0, HDMI, HDCP

Video processing

Decoder	12 bit digital (3D-adaptive comb filter)
Analog sampling	12 bits per color; 13.5 MHz standard (video) 170 MHz standard (RGB)
Digital pixel data bit depth	8, 10, or 12 bits per channel; 165 MHz pixel clock (HDMI)
Colors	1 billion (10 bit processing)

Video output

Number/signal type	
IN1604 DTP	1 DTP 330 or HDBaseT, configurable (HDCP compliant)
IN1604 HD	1 HDMI digital video (HDCP compliant)
Connectors	
IN1604 DTP	1 female RJ-45
IN1604 HD	1 female HDMI
Digital bit depth	8 or 10 bit, automatic
Scaled resolution	640x480[8], 800x600[8], 1024x768[8], 1280x720[8],1280x768[8], 1280x800[8], 1280x1024[8], 1360x768[8], 1366x768[8], 1400x1050[8], 1440x900[8], 1600x900[8], 1600x1200[8], 1680x1050[8], 1920x1200[8] HDTV 480p[7,8], 576p[6], 720p[3,4,5,6,7,8], 1080i[6,7,8], 1080p[1,2,3,4,5,6,7,8], 2K (2048x1080)[1,2,3,4,5,6,7,8] [1] = at 23.98 Hz, [2] = at 24 Hz, [3] = at 25 Hz,[4] = at 29.97 Hz, [5] = at 30 Hz, [6] = at 50 Hz, [7] = at 59.94 Hz, [8] = at 60 Hz

Sync

Input type	RGBHV, RGBS, RGsB, bi-level or tri-level component video
Input standards	NTSC 3.58, NTSC 4.43, PAL, SECAM, TMDS
Input level	2.75 V to 5.0 Vp-p for RGBHV or RGBS 0.6 Vp-p for component video tri-level sync 0.3 Vp-p for component video bi-level sync, RGsB, or composite video
Input impedance	Horizontal and vertical: 510 ohms
Max. input voltage	5.0 Vp-p

Interconnection between IN1604 DTP and DTP/HDBaseT receiver (IN1604 DTP only)

Connectors	1 female RJ-45
Termination standard	TIA/EIA-T568B
Signal transmission distance	Up to 330' (100 m) using shielded twisted pair cable or XTP DTP 24 STP cable
Cable requirements	Solid conductor, 24 AWG or better
Cable recommendations	400 MHz bandwidth, STP (shielded twisted pair)

NOTE: Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.

NOTE: Output signals:
DTP: HDMI with embedded audio, analog audio, RS-232 and IR, and remote power
HDBaseT: HDMI with embedded audio, RS-232 and IR

Audio

Gain

	Input	Output	System Gain
Unbalanced	Analog input 1 (TRS)	Analog output	0 dB
		TP output	-6 dB
	Analog input 2 (captive screw)	Analog output	-6 dB
		TP output	-12 dB
Balanced	Analog input 2 (captive screw)	Analog output	0 dB
		TP output	-6 dB

Frequency response	20 Hz to 20 kHz, ±0.5 dB
THD + Noise	< 0.1% @ 1 kHz, 20 Hz to 20 kHz bandwidth (at nominal level)
S/N	>90 dB, at maximum output (unweighted)
Crosstalk	≤ -80 dB @ 1 kHz, fully loaded
Stereo channel separation	>80 dB @ 1 kHz

Audio input

Number/signal type	1 analog stereo, unbalanced 1 analog stereo, balanced/unbalanced 3 digital stereo, de-embedded from HDMI (PCM only)
Connectors	(1) 3.5 mm stereo jack; tip (L), ring (R), sleeve (ground) (1) 3.5 mm captive screw connector, 5 pole 3 female HDMI type A
Impedance	Analog inputs: >10k ohms unbalanced, >20k ohms balanced
Nominal level	3.5 mm stereo jack: +4 dBu (1.23 Vrms) Captive screw connector: +4 dBu (1.23 Vrms) or -10 dBV (316 mVrms), adjustable
Maximum level	Analog inputs: +15 dBu unbalanced, +21 dBu balanced
CMRR	70 dB @ 1 kHz
Input gain adjustment	-18 dB to +24 dB, adjustable per input, in 1 dB steps, analog inputs only

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

Audio output

Number/signal type

IN1604 DTP ..... 1 analog stereo or mono, balanced/unbalanced
1 DTP 330 (embedded digital audio and remote balanced/unbalanced analog audio) or HDBaseT (embedded digital)

NOTE: Remote analog audio output is not available in HDBaseT mode.

IN1604 HD ..... 1 analog stereo or mono, balanced/unbalanced
1 HDMI embedded

Connectors

N1604 DTP ..... (1) 3.5 mm captive screw connector, 5 pole
1 female RJ-45

IN1604 HD ..... (1) 3.5 mm captive screw connector, 5 pole
1 female HDMI

Impedance ..... 50 ohms unbalanced, 100 ohms balanced

Gain error ..... ±0.5 dB channel to channel

Maximum level (Hi-Z) ..... >+15 dBu, unbalanced, >+21 dBu, balanced at 1% THD+N

Output volume range ..... 0 to -100 dB in 1 dB steps

NOTE: System gain for the analog DTP receiver output is rated at -12 dB (unbalanced) and -6 dB (balanced).

Communications — scaling presentation switcher

Serial control port

IN1604 DTP ..... 1 bidirectional RS-232, 3.5 mm captive screw connector, 5 pole (rear panel, uses 3 poles)

IN1604 HD ..... 1 bidirectional RS-232, 3.5 mm captive screw connector, 3 pole (rear panel)

Baud rate and protocol ..... 9600, 8 data bits, 1 stop bit, no parity

Serial control pin configuration

IN1604 DTP ..... 1, 2 = unused, 3 = Tx, 4 = Rx, 5 = Gnd

IN1604 HD ..... 1 = Tx, 2 = Rx, 3 = Gnd

Contact closure ..... 4 contact closure inputs on (1) 3.5 mm captive screw connector, 5 pole

Tally output ..... 4 tally outputs on (1) 3.5 mm captive screw connector, 5 pole

Tally output power ..... +5 VDC, 0.2 A

USB control port ..... 1 front panel female mini USB B

USB standards ..... USB 2.0, high speed

Program control ..... Extron PCS configuration software for Windows®
Extron Simple Instruction Set (SIS™)

Communications — external device (pass-through, unidirectional or bidirectional) (RS-232/IR over TP for the IN1604 DTP only)

NOTE: Protocol is mirrored between the connected DTP 330 endpoint and the "Over TP" port on the IN1604 DTP. Signals from a control device pass into the "Over TP" port, are embedded with the TP signal, and sent to an individual DTP 330 Rx or HDBaseT endpoint for control of remote sink devices.

The "Over TP" port is simply a pass-through connection to endpoints. There is no RS-232 or IR insertion from any IN1604 DTP control port to the "Over TP" port.

Serial control pass-through port

"Over TP" output ..... RS-232 via (1) 3.5 mm captive screw connector, 5 pole (shared with IR port)

Baud rates ..... Up to 115200 baud

Protocol ..... 6 - 8 data bits
1 or 2 stop bits
no parity (default)
even or odd parity
flow control = XON, XOFF, none

Serial control pin configuration	1 = Tx, 2 = Rx, 3 = Gnd
IR pass-through control port	TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz
"Over TP" output	(1) 3.5 mm captive screw connector, 5 pole (shared with RS-232 port)
IR control pin configuration	3 = Gnd, 4 = IR Tx, 5 = IR Rx

General

Power supply	Internal Input: 100-240 VAC, 50-60 Hz
Power consumption	
Full power	
IN1604 DTP	25.0 watts
IN1604 HD	15.1 watts
Power save mode	
IN1604 DTP	9.0 watts
IN1604 HD	6.6 watts
Remote power capability	IN1604 DTP only: supports one DTP Rx endpoint device

NOTE: Remote power is not available in HDBaseT mode.

Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Fan, air flows front to rear, vents on front and rear
Thermal dissipation	
Full power	
IN1604 DTP	67.0 BTU/hr
IN1604 HD	50.2 BTU/hr
Power save mode	
IN1604 DTP	28.0 BTU/hr
IN1604 HD	22.3 BTU/hr
Mounting	
Rack mount	Yes, with optional rack shelf
Furniture mount	Yes, with optional under-desk or through-desk mounting kit
Enclosure type	Metal
Enclosure dimensions	1.75 H x 8.75" W x 8.5" D (1U high, half rack wide) (4.4 cm H x 22.2 cm W x 21.6 cm D) (Depth excludes connectors.)
Product weight	
IN1604 DTP	2.1 lbs (1.0 kg)
IN1604 HD	2.1 lbs (1.0 kg)
Shipping weight	
IN1604 DTP	4 lbs (2 kg)
IN1604 HD	4 lbs (2 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
Environmental	Complies with the appropriate requirements of RoHS, WEEE.
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.

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